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ABSTRACT

The multimedia instructional system used at Mt. San Jacinto College (California) provides instruction to help students achieve more of the course objectives. How to write objectives, different ways to utilize media, and individual, small group, and large group instruction are some of the topics discussed. Some advantages of this system are: (1) the student may attend the Instructional Learning Center, where instructors are available, at his convenience; (2) the material is self-pacing; (3) the student becomes an active participant instead of a passive observer; and (4) the media presentation is constant and of high quality. The relationship of multimedia to the accountability system at this college is also discussed. (RN)

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Multimedia System of Individualized Instruction

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UNIVERSITY OF CALIF.
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introduction

Mt. San Jacinto College, since its inception has sought methods or systems which would improve the quality of instruction and the efficiency of learning.

When the college began its classes on a new campus in September 1966, strong emphasis was placed on individualizing instruction. Interested faculty members were employed during that summer and during other holidays that year to write scripts and plan storyboards for the initial preparation of audio visual individualized lessons with student participation worksheets. Each year additional instructors have been employed to continue the unending development of lessons which have added a significant new dimension to providing more students with the opportunity to achieve more of the course objectives.

multimedia instructional materials

Multimedia instructional materials are produced at the Mt. San Jacinto College facility. Taped lessons serve as the basis for all multimedia units. Instructors write the scripts for the taped lessons and they are recorded under the direction of professional sound technicians.

Visuals for multimedia instructional materials may be filmstrips, slides, or printed booklets—all produced on campus. Artists and photographers develop the visuals needed for the multimedia units.

All multimedia instructional materials are tested on the Mt. San Jacinto College campus and revisions are made as needed.

measurable objectives for courses

(and objectives which are currently unmeasurable)

One of the first duties of an instructor at Mt. San Jacinto College who is to prepare individualized multimedia lessons is to write measurable objectives for the course. These objectives are defined as: a series of statements describing in measurable terms what skills, knowledges and other outcomes students are expected to achieve as a result of this class. When appropriate, intermediate points in the course are designated at which students will be awarded units of credit for completing objectives to that point. Prepared along with these objectives and usually as an integral part

of them are criteria for the awarding of letter grades based on student achievement of performance objectives for the course and including criteria for establishing grades for intermediate points in the course where each unit or fraction of a unit is earned. Wherever possible these objectives with their grading criteria are verified by being approved by an advisory committee, a group of teachers from other schools or colleges who teach the same subject or by a recognized authority.

These verified objectives are used as the basis for the preparation of instructional media but they are also a crucial element in the accountability system being developed by the college.

Criticism of the concept of measurable objectives has frequently centered on the contention that there is no known way to measure, during the semester when the course is in progress, important learnings dealing with attitudes, appreciations and social behavior. In order to not slight these important learning areas, a section of the course objective statement is entitled "Objectives which are currently unmeasurable." Under this heading are two columns. One is entitled "Description of what the student will hopefully do as a result of achieving these objectives." The second one is entitled "What the instructor did to help the student achieve these objectives."

These currently unmeasurable objectives are outside the area of the course to which grading criteria are applied.

Measurable course objectives or lesson objectives have the following characteristics:

1. Describe the task the learner will be doing at the end of the instructional period; i.e., the learner will:

Write	Construct	Paint
Recite	List	Draw
Identify	Compare	Shape
Differentiate	Contrast	Operate
Solve	Assemble	

2. Describe the conditions under which the student will perform; i.e.,

"Without reference to outside materials . . . . . "
"With the aid of the textbook . . . . . "
"Given a list of _____ . . . . . "
"In the laboratory . . . . . "
"In a thirty-minute time period . . . . . "

3. Present criteria of successful performance by the student; i.e.,

"With 80% accuracy the student will . . . . . ."
"The student will identify 18 of the 20 characteristics of . . . . . ."
"The student will write an essay with not more than six punctuation errors . . . . . ."

different ways to utilize multimedia

As soon as the measurable and currently unmeasurable objectives have been written and, if possible, verified, the instructor considers all available teaching strategy including multimedia usage in order to assist the largest percentage of students to accomplish as many of the course objectives as possible. He may use commercially available media or produce media tailored to fit the special requirements of the course. Media at Mt. San Jacinto College have been used in all of the following ways:

1. Instructor presents the course material in a lecture, demonstration, student participation format. He teaches rapidly and although exposing the students to all the skills and knowledges they need, he does not stop to see that all students are able to accomplish to perfection the lesson objectives. Teaching to the point of saturation is unnecessary in this case since the instructional points made are reinforced in multimedia lessons which duplicate the teacher's presentations. Multimedia lessons are available to students at any time in the Instructional Center.

or

2. The instructor assigns laboratory jobs to students such as in auto mechanics; in the process of accomplishing the repair job, the student needs to know related instructional material. He is given a multimedia lesson just when he needs the information to apply it on the repair job. The media is utilized in the laboratory or immediately adjacent thereto.

or

3. The instructor teaches in a traditional manner with lecture, demonstration and discussion, and, either in addition to a textbook or in place of a textbook, he assigns students multimedia lessons to utilize outside of regular class hours.

or 4. Students attend class using media on an individual self-pacing basis during scheduled hours and at any additional time they desire. The instructor is present during all scheduled hours and is nearby during open lab hours. Students are assisted by the instructor on the basis of their individual needs. Students work as fast as they can to achieve objectives for each unit of credit. Students may earn more credit in one semester than is shown on the schedule. Students may also earn less units than are shown on the schedule depending on the objectives achieved. Classes typically using this approach are shorthand and typing.

or 5. Instructors, upon finding students with certain learning deficiencies, prescribe the use of multimedia units to help these students make up their deficiencies. An example of this usage would be English Composition students who need to improve their grammar and punctuation.

or 6. Some instructors utilize multimedia lessons with their whole class viewing them at one time with the worksheet questions being used for small group discussion. Under certain conditions this method may be justified but this is obviously not "Individualized Instruction."

or 7. Instructors meet with their students on an individual basis, in small groups and in large group sessions. Students use media in the Learning Center as part of the regularly scheduled class hours. This organizational plan for utilizing multimedia individualized lessons is explained in more detail in the next section.

individual, small group, large group instruction

The College has scheduled time for the instructor to meet with any student who wants or needs individual instruction. Such private discussions can provide a variety of services to the student. If the objectives of a course indicate that the instructor should meet

with each student once every two weeks, then that class would be scheduled accordingly. However, it has seemed more advantageous for the instructor to identify those students in the small group session or large group session who need or want special assistance.

The instructor assigns each student a specific time to meet with him (for one meeting or on a regular basis) if such a need is apparent. It must be stressed that these meetings are not just for the "slow" achiever. Adequate time is given to the "average" and "specially capable" students to direct them in study and/or research following their particular interests.

THE SMALL GROUP SESSION

In certain courses, after the students have had the opportunity of learning the materials in the learning center, they are required to attend a small group discussion. The number of students varies from 12 to 20.

The discussion is developed with the objective of stressing application and synthesis of the facts which the student learned from his textbook and in the instructional center. Frequently a quiz is given at the end of such a session. Normally, little new material is presented in the small group session. The instructor uses this meeting to provide for the following:

1. A session to clarify confused points or issues.
2. A time to discuss homework.
3. An opportunity for instructors and students to become better acquainted with each other on a personal basis.
4. A bridge from factual knowledge learned in the instructional center and textbook to application by way of interaction within the group.
5. A time to assign team projects or individual research and to report on these.
6. An opportunity for students to learn from one another.
7. An opportunity to identify and schedule for individual assistance those students who have special needs.
8. A time to utilize small group activities; for example, buzz sessions, role portraying, personality strength reinforcement sessions, etc.

THE LARGE GROUP SESSION

In courses that employ small group sessions, the instructor meets with all students enrolled in a subject for large group sessions every 2-3 weeks during a semester. The first such session will be for the purpose of orientation to the subject matter and to the system, as well as for the purpose of motivation. Special lectures on up-to-the-minute material, 16mm motion picture films, and guest lecturers are all reasons for having large group sessions.

advantages of the system

The following list outlines some of the advantages of using multimedia as an individualized instructional device.

1. The student can attend the Instructional Learning Center at his convenience as long as he completes the lessons assigned.
2. The material is self-pacing. The slow learning student can repeat any section of the tape and filmstrip as many times as necessary until he has mastered the material.
3. The student and his instructor can determine whether or not he needs to spend time learning this material, by using a pretest, available with some of the lessons produced by Mt. San Jacinto College.
4. The student is not a passive observer in the learning process but he becomes an active participant. He must answer questions on the worksheet or perform an operation being taught in the lesson and confirm that this activity was correctly done.
5. The student can obtain assistance from an instructor in the Learning Center if he needs such assistance although the lesson materials are designed to reduce to a minimum the need for such assistance.
6. The media presentation is of high quality and is constant. The mood or fatigue of the instructor does not influence the media presentation. The instructor visually spends from 40 to 80 hours preparing the script for one 30-50 minute multimedia lesson. In addition, it is edited by at least one other person. Artists and photographers spend additional hours on producing this lesson. The results for certain selected les-

sons are a more precise, carefully illustrated lesson that meets the objectives of the course better than they can be met in ways short of teacher to student individual tutoring.

multimedia as it relates to the accountability system being developed at Mt. San Jacinto College

The use of multimedia is a cost effective method of instruction when consideration is given to the efficient use of resources to meet verified objectives. The definition of accountability as applied by Mt. San Jacinto College to the educational process is: "The ability to demonstrate cost effectiveness (efficient use of resources) in meeting pre-determined educational philosophy and goals when using verified objectives, when serving well identified students, and when taking into consideration constraints relative to school, course, group of students and community."

The staff of the college prepares an institutional Objectives Statement in the Fall each year for presentation to the Trustees. This statement sets forth the educational goals and projects the measurable objectives for each major program. The Institutional Objectives Statement includes the projected number of units and grades to be earned by the whole student body and cost per unit earned. The Objective Statement also includes the percentage of students who will persist throughout the year and will complete their educational objectives. Since the accepted measurable output for the college instructional program is "earned units of credit" and "grade averages," it is absolutely essential to have measurable course objectives and precise grading criteria which have been verified. Verification includes seeking approval from other instructors of the same subject, requesting review by an acknowledged authority in the field or by seeking recommendations from an advisory committee.

At the end of the school year a report on the achievements of the educational program is made to the trustees along with the cost per unit earned and and other output factors describing a broad range of services to students and to the community.

Mt. San Jacinto College makes available to other schools and colleges multimedia and copies of measurable course objectives with grading criteria.

Several hundred multimedia lessons are made available at low cost to anyone who wishes to purchase them either through direct mail order or by local multimedia distributors.

Copies of sample measurable course objectives with grading criteria are available by mail order from the Mt. San Jacinto College Multimedia Office, P. O. Box 248, Gilman Hot Springs, California 92340.

Write for a catalog and descriptive material.